



# The Connect Kansas Broadband Initiative

Presentation for the  
Kansas Broadband Summit

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CONNECT  
KANSAS<sup>SM</sup>

[www.connectkansas.org](http://www.connectkansas.org)



## *Who We Are and Why We Exist...*

Connected Nation is a national 501(c)(3) organization with primary offices in Washington, DC and Bowling Green, KY. Connected Nation's mission is to generate and support economic development by:

- 1) expanding broadband availability** and
- 2) increasing broadband adoption rates**

Connect Kansas was established to serve as the state's partner in accomplishing these goals.

We exist because we believe that states, communities, families, and individuals can realize great economic and social advantages when we **accelerate broadband availability** in unserved areas and **increase broadband use** in all areas, rural and urban, alike.



## *Objectives for the Mapping Initiative*

- 1. To form strong working relationships with all of Kansas' broadband providers and support an environment of public/private collaboration on broadband issues among all stakeholders**
- 2. To create, maintain, and validate Kansas' first detailed maps of broadband coverage**
- 3. To utilize the resulting maps to accurately pinpoint any remaining gaps in broadband availability**
- 4. To assess the level of connectivity currently provided to Kansas' "community anchor institutions" (i.e., schools, libraries, hospitals, etc.)**
- 5. To assess broadband use among Kansas' businesses and residents, and identify barriers to broadband adoption**
- 6. To contribute accurate data from the State of Kansas for inclusion in the national broadband map to be released in February 2011.**



## *Data Collection Process*

- **Connect Kansas' project team members diligently work to contact each of Kansas' identified broadband providers via phone and e-mail.**
- **Connect Kansas invites each provider to execute a Non-Disclosure Agreement (NDA) with us to protect proprietary and confidential data. A template NDA is available to download at [www.connectkansas.org](http://www.connectkansas.org) .**
- **Once an NDA is executed with a given provider, Connect Kansas' project team members will work with that provider to transfer data to us in a usable format. Data request forms are distributed to aid in the process. While these forms strive to satisfy the objectives of the mapping initiative, we are prepared to receive data in formats other than those suggested in our template forms. For example, we can convert Auto CAD .dwg files, Map Info files, etc.**
- **Connected Nation's GIS division processes the transferred data and creates a visual depiction of broadband service availability for each provider.**



## *Data Collection Process*

*-continued-*

- Each provider has an opportunity to approve the generated map of their service area before the information is applied to the aggregated statewide map.
- Per the federal grant program guidelines, data is submitted every six months to NTIA at the Census Block level of detail
- The maps will be continuously updated through at least December 2014 with the approved SBDD funds.
- Connected Nation's Engineering and Research Divisions are undertaking an ongoing process of validating the coverage information reflected on the maps.
  1. On-the-ground field validation of infrastructure
  2. Survey research to "spot-check" coverage
  3. Public feedback via [www.connectkansas.org](http://www.connectkansas.org)



## *Provider Validation Process*

- On-site visits with providers.
- Verifying data which had been received from these providers.
- Conducting spectrum analysis on fixed, mobile, and WiMAX operations.
- Cross-referencing the physical coordinates of remote terminals, digital photography of facilities, and randomly testing throughput speeds to compare against data submitted representing the Maximum and Average speeds as reported by the broadband providers.
- To date, Connected Nation has completed in-the-field validation of 25 companies totaling 26.32% of the broadband provider universe within the state of Kansas
- The results of the testing provided:
  - 100% affirmation of frequencies being used (as tested by an Avcom PSA-37XP spectrum analyzer).
  - 97% affirmation of coordinates submitted.
  - 100% affirmation of mobile broadband (as tested by speed tests conducted using a 3G smart phone(s)).



# *Community Anchor Institutions*

## *CAI*

- K-12, Libraries, Healthcare, Public Safety, Colleges and Universities, Other-Government and Other-Non Government.
- Connect Kansas continues to utilize a customized online survey hosted through SurveyMonkey, with a landing page on the Connect Kansas website.
  - [http://www.connectkansas.org/mapping/Community Anchor Institution Data Collection.php](http://www.connectkansas.org/mapping/Community_Anchor_Institution_Data_Collection.php)
- In partnership with the state of Kansas, Connect Kansas continues to identify and process CAI data obtained through an ongoing statewide outreach campaign.
- Connect Kansas has formed a partnership with the State Library of Kansas, Kansas Department of Education, and the Kansas Adjutant General to promote the CAI project and target institutions within the state. Connect Kansas also continues to operate a CAI hotline to answer questions related to the survey tools and CAI data collection.
- Physical address information continues to be augmented through manual sourcing and geocoded by Connect Kansas through ESRI ArcGIS software.



# Community Anchor Institutions CAI

-continued-

Category	Total Number of CAIs	Connectivity Data Points	Geocoded locations lat/long
K-12	2,173	800	2,173
Higher Ed	453	214	453
Library	247	124	247
Healthcare	1,711	233	1,710
Public Safety	96	58	96
Other govt	529	394	529
Non-govt	3	3	3
Totals	5,212	1,826	5,211



## *Kansas Availability Statistics*

Number of Providers on Map: **74 (excluding satellite provider)**

Number of Providers Submitted to NTIA: **77**

Broadband Definition: **768 kbps downstream/200 kbps upstream**

### FIXED PLATFORMS

- Statewide Broadband Covered Households: **1,008,367**
- Statewide Unserved Households: **29,524**
- Statewide Total Households: **1,037,891**
- Percentage: **97.16%**
- Geographic Availability: **74.21%**
- Rural Statewide Broadband Covered Households: **445,614**
- Rural Statewide Households: **28,032**
- Rural Statewide Total Households: **473,646**
- Percentage: **94.08%**

### ALL PLATFORMS

- Statewide Broadband Covered Households: **1,035,027**
- Statewide Unserved Households: **2,864**
- Statewide Total Households: **1,037,891**
- Percentage: **99.72%**
- Rural Statewide Broadband Covered Households: **470,875**
- Rural Statewide Unserved Households: **2,771**
- Rural Statewide Total Households: **473,646**
- Percentage: **99.41%**

Mapping data also can examine availability of different speeds and platforms

- 5.8% of Kansas households depend on DSL platform for 768 kbps broadband (3.6% for 6 Mbps and above)
- This factor varies widely by geography – from 1% to 84% in different KS counties



## *BroadbandStat: The Nexus Between Mapping and Planning*

- **The BroadbandStat application represents the nexus between mapping current broadband availability and planning for the future.**
- **BroadbandStat is a powerful, yet user-friendly and customizable tool that will allow state leaders & the public to:**
  - **Search for and identify broadband service at a specific address, including available speeds and service providers**
  - **Understand & track broadband deployment over time**
  - **Analyze and prioritize unserved and underserved areas using population and household density information**
  - **Track ARRA-funded broadband projects**
  - **Build and evaluate scenarios to help prioritize future broadband infrastructure proposals**
  - **Track broadband adoption rates and barriers to broadband adoption, community by community, across the state.**



# Kansas BroadbandStat Demonstration

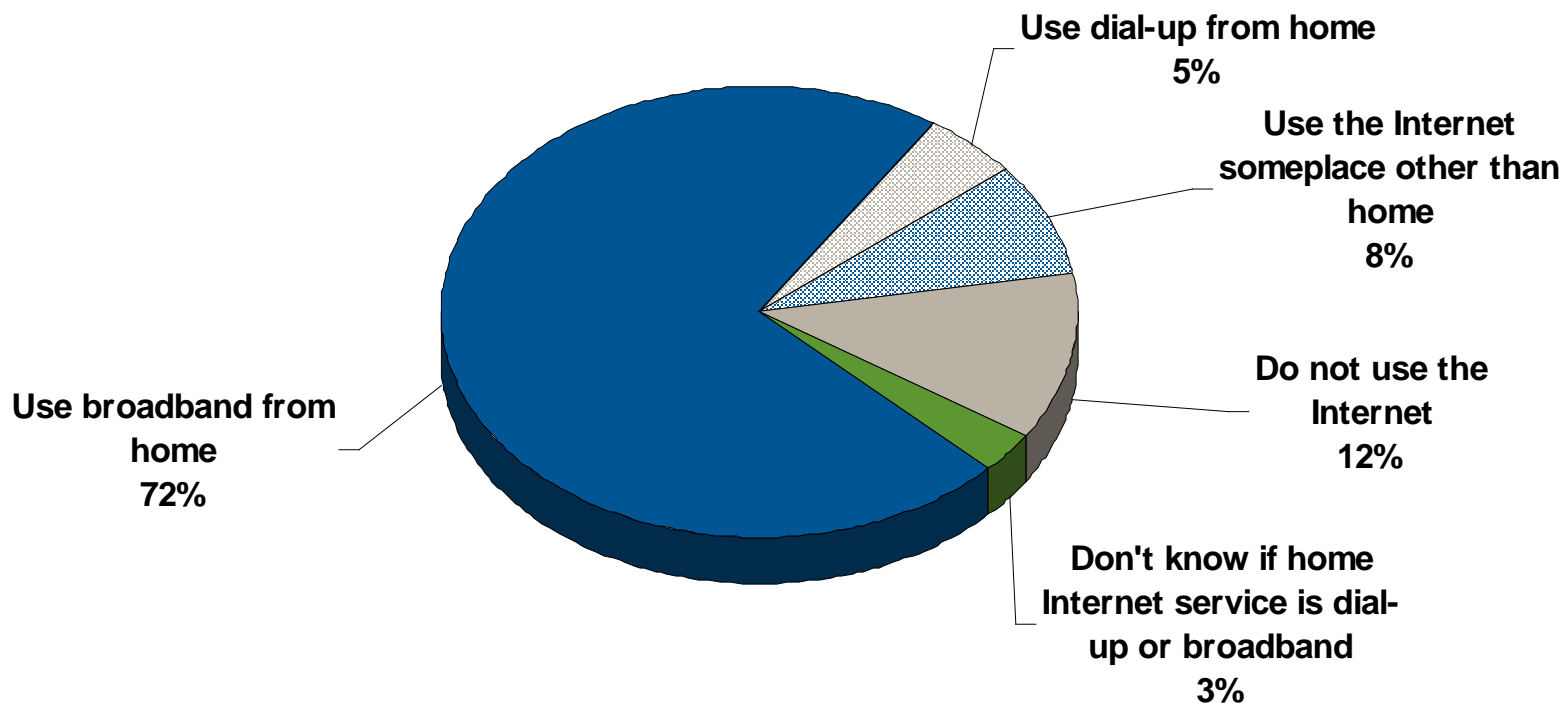
## We will cover:

- Map features & tools
- Broadband availability by provider type
- Analysis of unserved areas (availability gaps)
- ARRA-funded broadband projects
- Community Anchor Institution (CAI) information



# Kansas Technology Adoption Summary

## Percent of all Kansas residents



Q: Do you have an Internet connection at home?,

Q: Do you have access to the Internet from any locations outside of your own home?, and

Q: Which of the following describe the type of Internet service you have at home?

(n=1,200 KS residents)

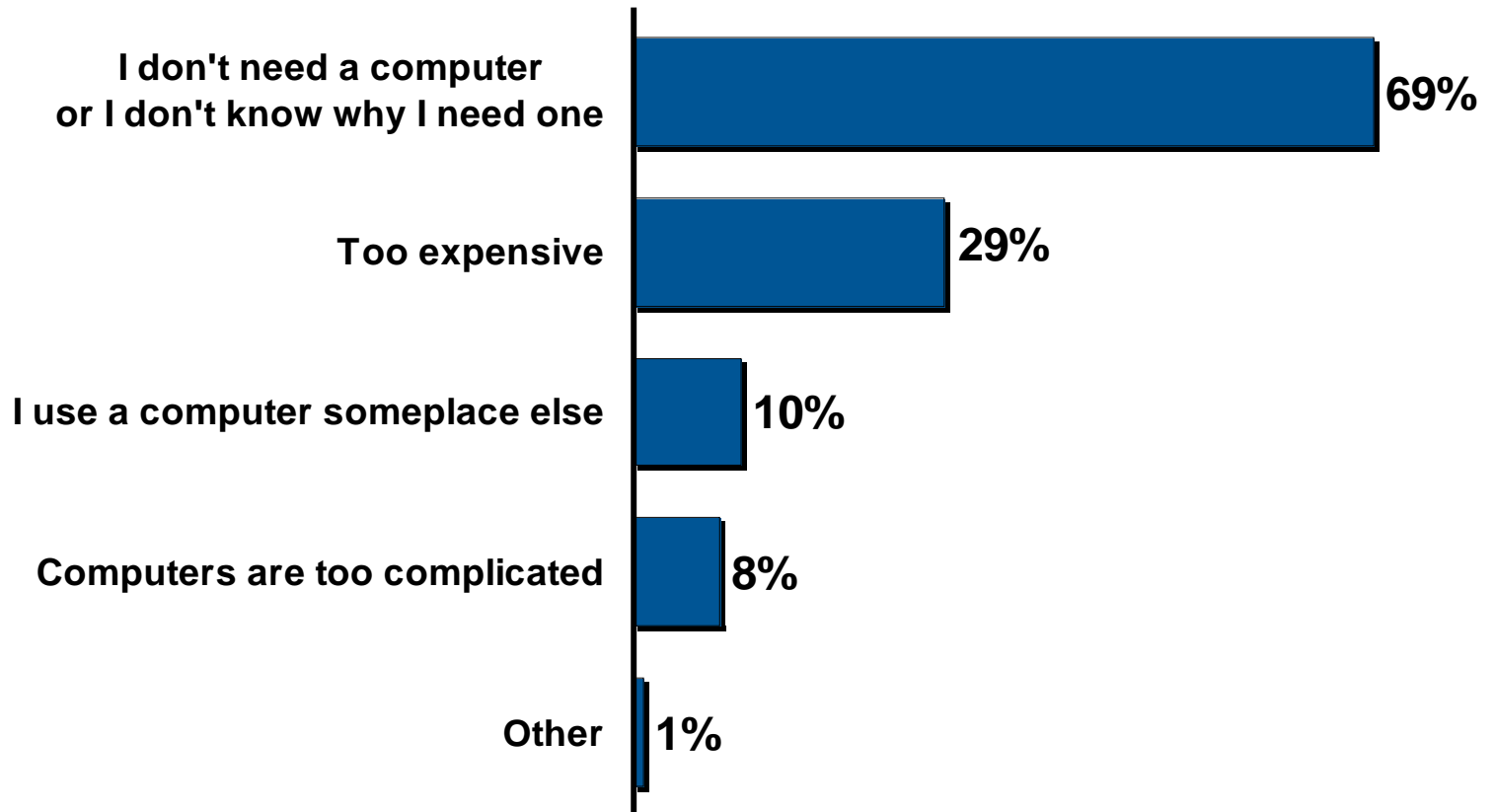
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Source: 2010 Connect Kansas Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Barriers to Computer Ownership

Percent of Kansas residents with no computer at home\*



\*Percentages do not add up to 100% because individuals could give multiple responses.

Q: Why don't you have a computer at home?  
(n=210 KS residents with no home computer)

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Source: 2010 Connect Kansas  
Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)

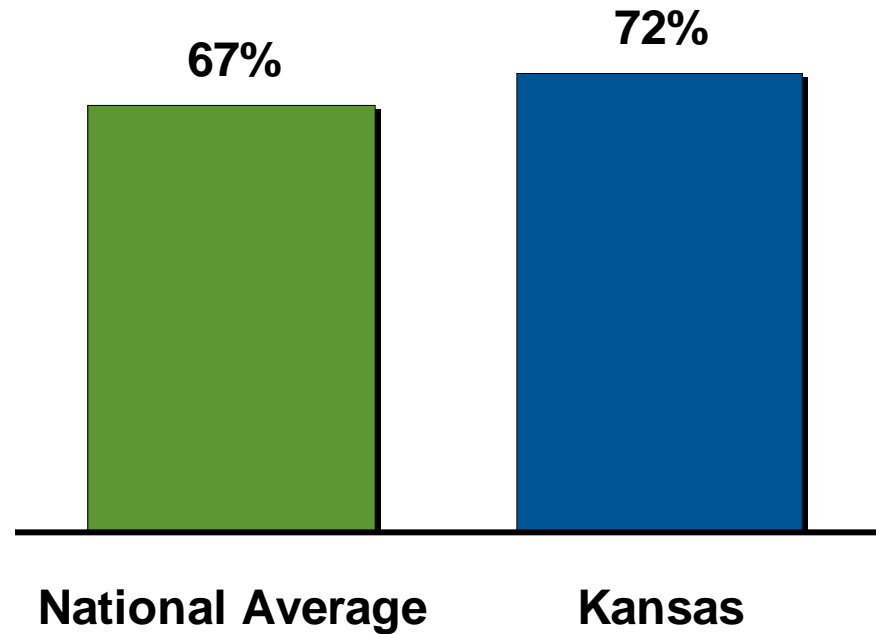


# Kansas Residents who Subscribe to Home Broadband Service

Percent of all Kansas residents with broadband service at home

Statewide, 72% of Kansans (approximately 1.5 million Kansas adults) subscribe to home broadband service.

National surveys indicate that 67% of American households subscribe to home broadband service.\*



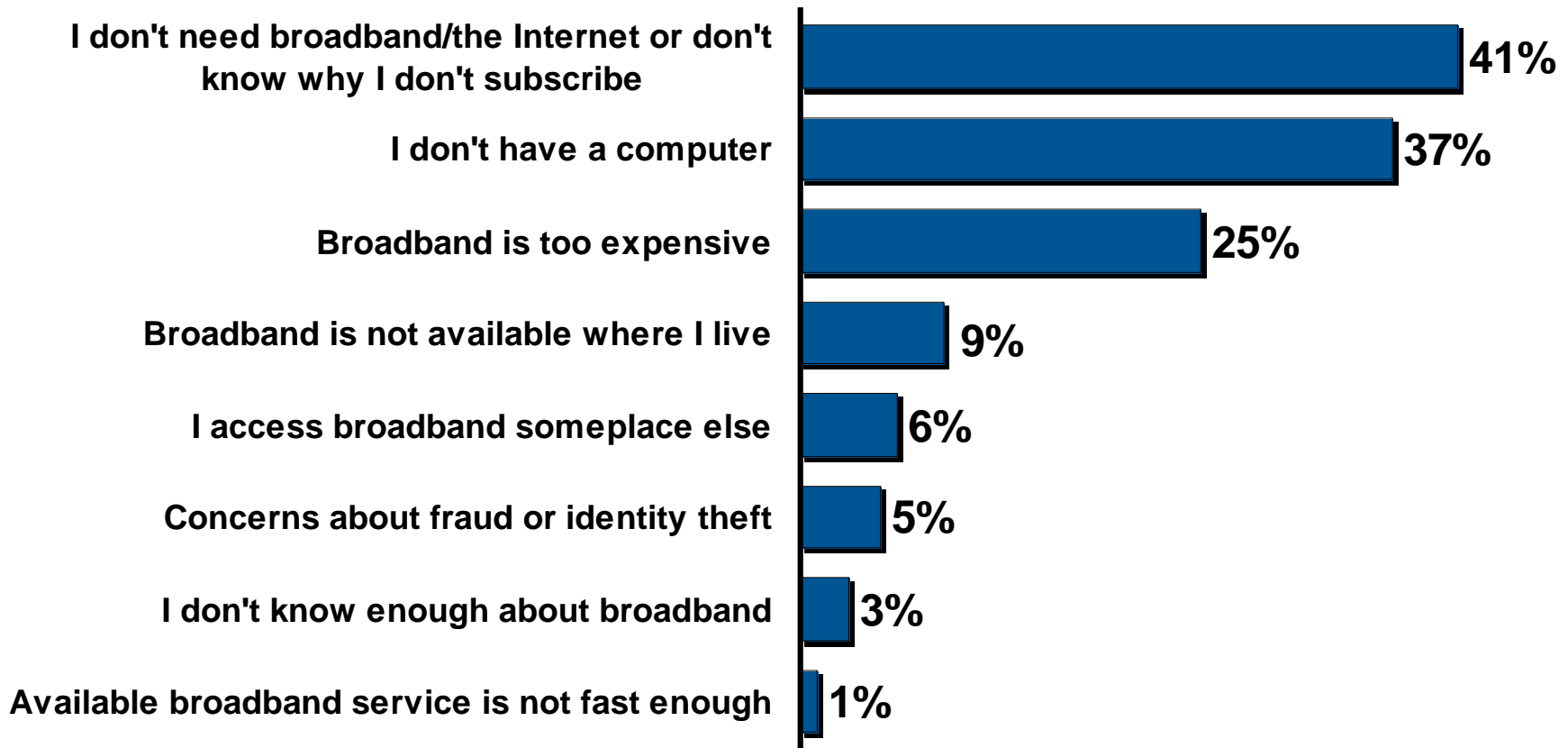
\*Source: Federal Communications Commission, *Broadband Adoption and Use in America, 2010*.  
Source: 2010 Connect Kansas Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)

Q: Which of the following describe the type of Internet service you have at home?  
(n=1,200 KS residents)



# Barriers to Broadband Adoption

## Percent of Kansas residents with no home broadband service\*



\*Percentages do not add up to 100% because individuals could give multiple responses.

Q: Why don't you subscribe to broadband at home?  
(n=348 KS residents who do not have home broadband service)

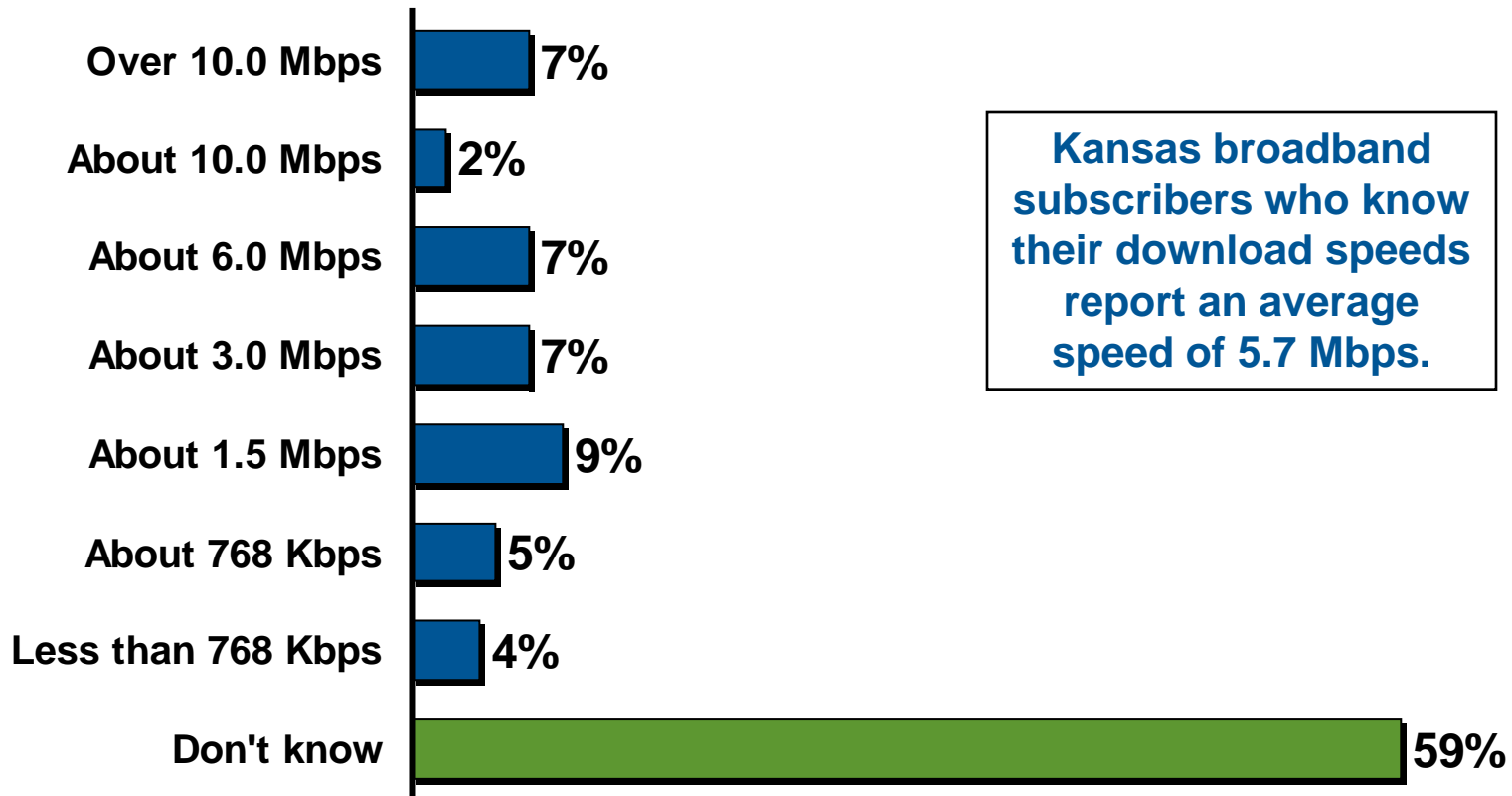
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Source: 2010 Connect Kansas Residential Technology Assessment  
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# Broadband Download Speeds

Download speeds among Kansas broadband subscribers

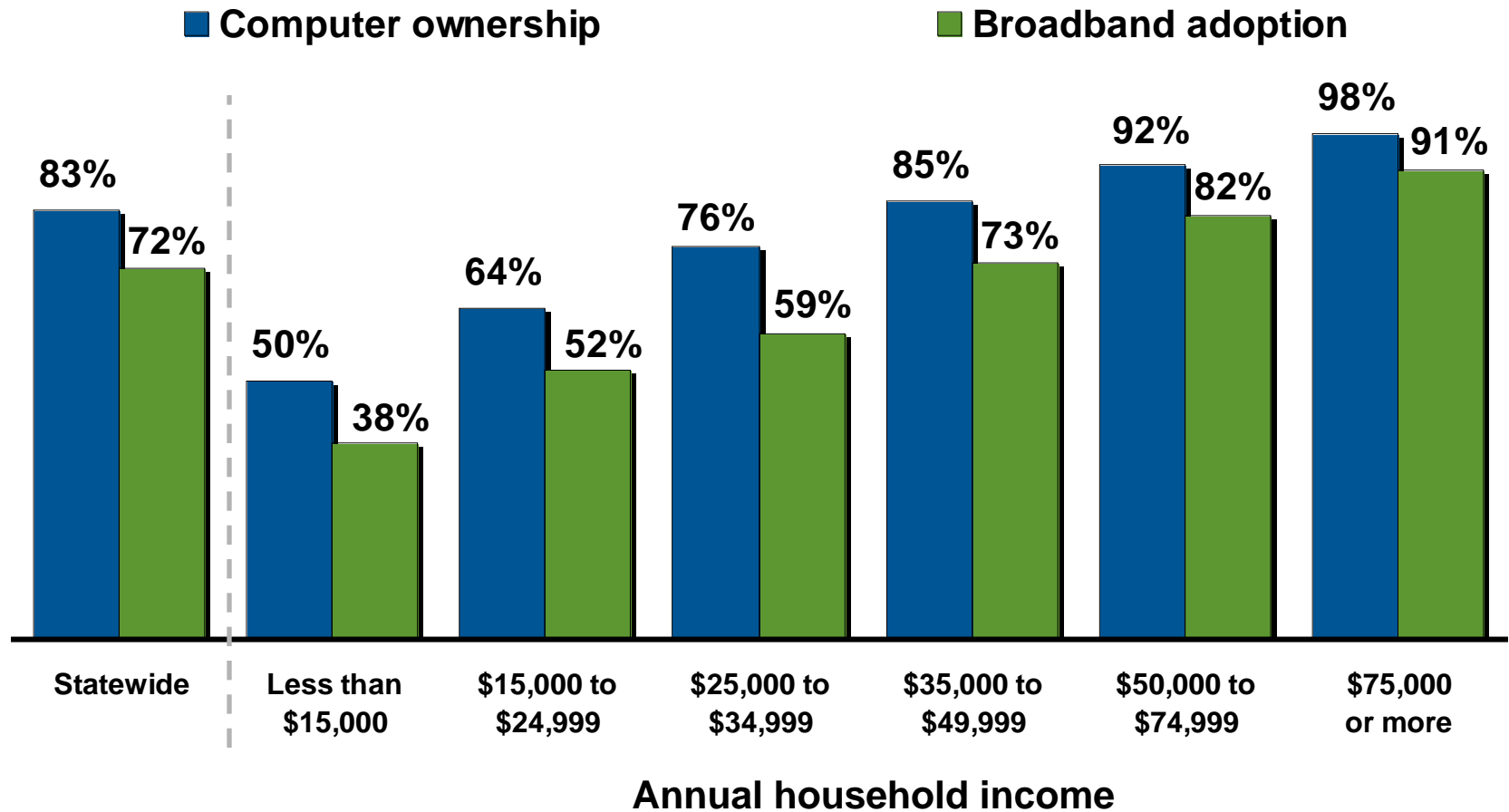


Q: To the best of your knowledge, what is the approximate download speed or bandwidth provided by your Internet service provider?  
(n=852 KS residents with home broadband service)

Source: 2010 Connect Kansas Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Technology Adoption by Income

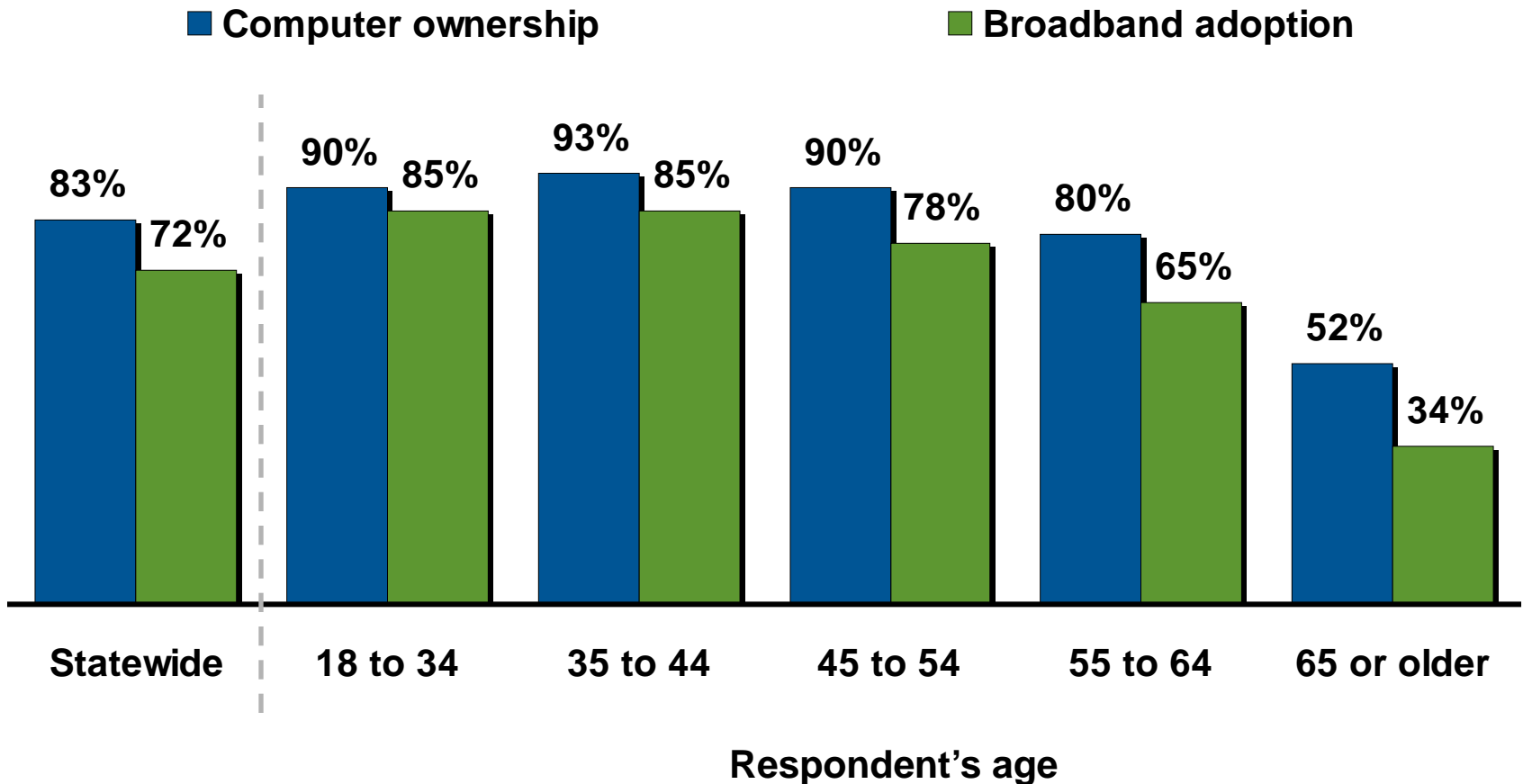


Q: Does your household have a computer? and  
Q: Which of the following describe the type of Internet service you have at home?  
(n=1,200 KS residents)

Source: 2010 Connect Kansas  
Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Technology Adoption by Age

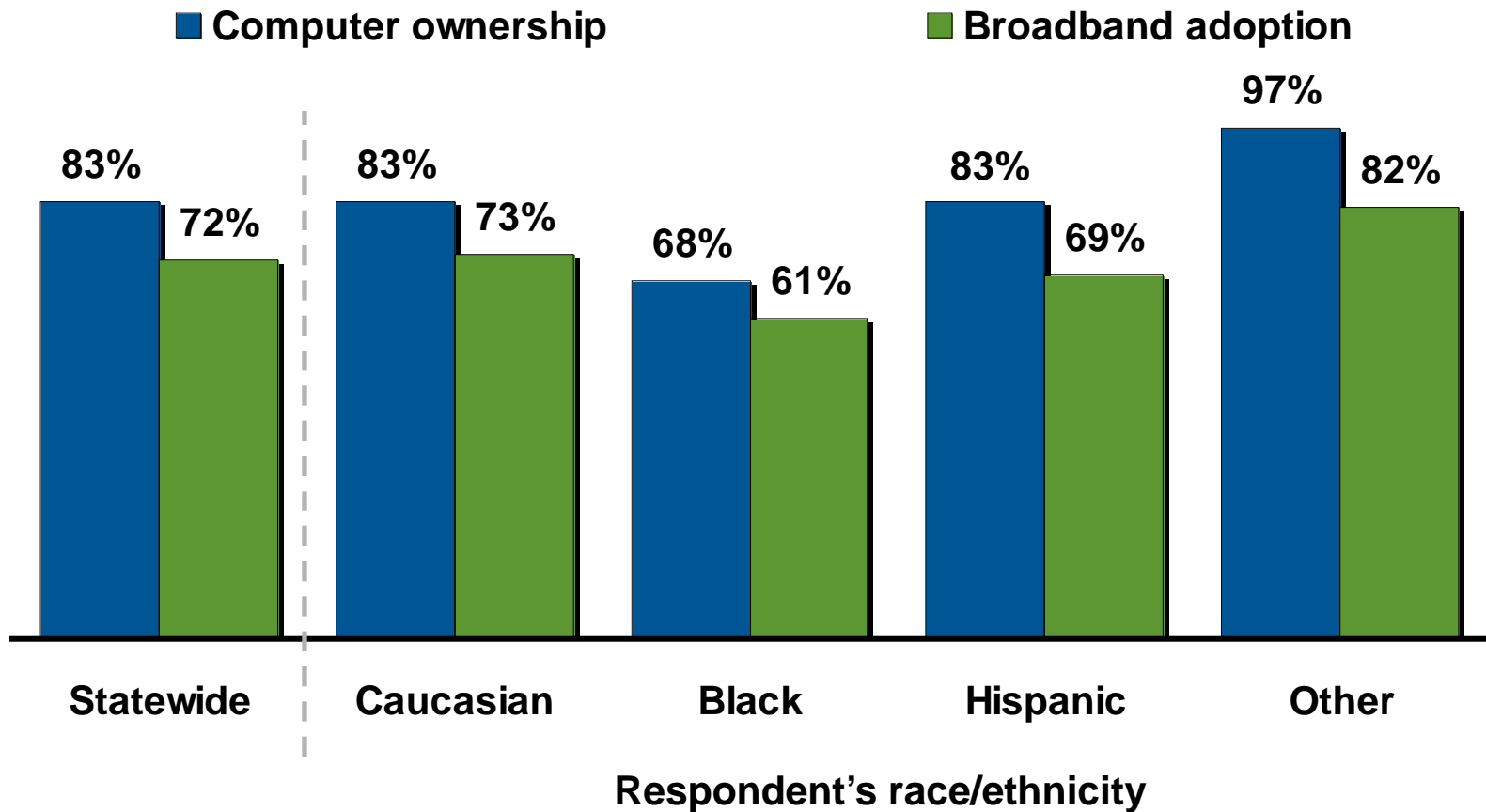


Q: Does your household have a computer? and  
Q: Which of the following describe the type of Internet service you have at home?  
(n=1,200 KS residents)

Source: 2010 Connect Kansas  
Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Technology Adoption by Race/Ethnicity

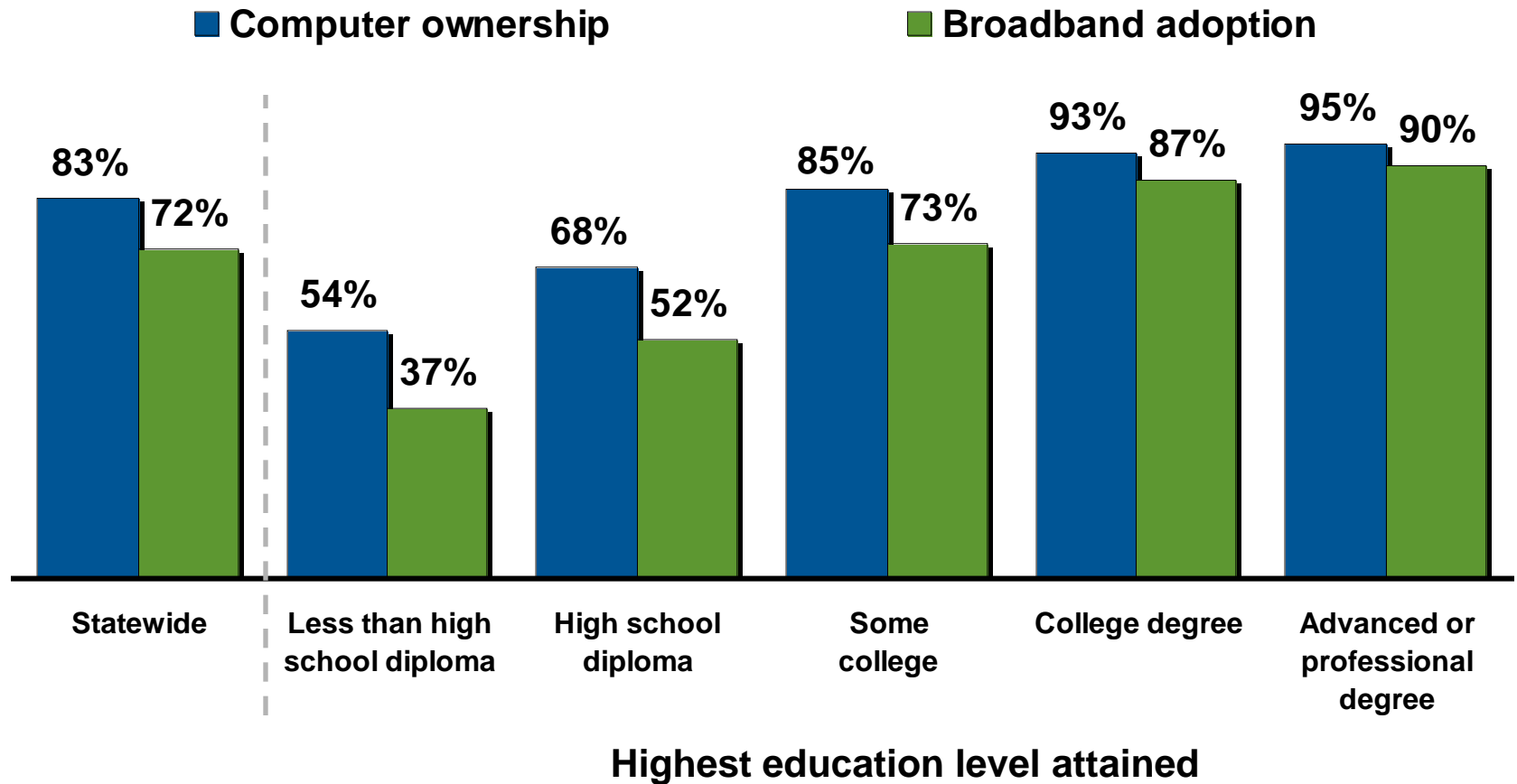


Q: Does your household have a computer? and  
Q: Which of the following describe the type of Internet service you have at home?  
(n=1,200 KS residents)

Source: 2010 Connect Kansas  
Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Technology Adoption by Education

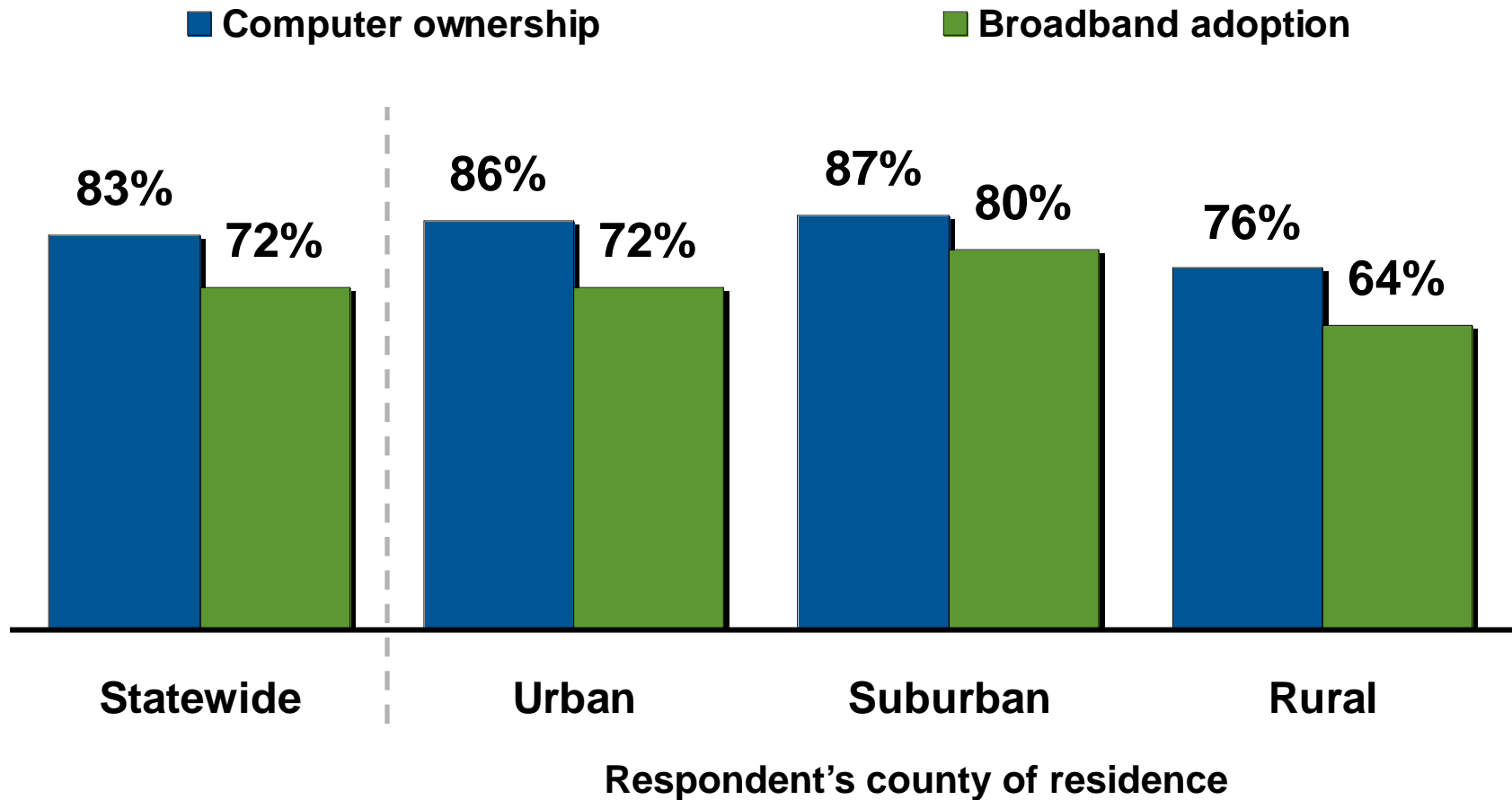


Q: Does your household have a computer? and  
Q: Which of the following describe the type of Internet service you have at home?  
(n=1,200 KS residents)

Source: 2010 Connect Kansas  
Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Technology Adoption by Urban-Rural Classification



Q: Does your household have a computer? and  
Q: Which of the following describe the type of Internet service you have at home?  
(n=1,200 KS residents)

Source: 2010 Connect Kansas  
Residential Technology Assessment  
[www.connectkansas.org](http://www.connectkansas.org)



# Methodology

**Data were collected by telephone through live computer-assisted interviews from a statewide random digit dial (RDD) sample of 1,200 households contacted between March 4 and March 12, 2010. On average, each survey took approximately 10 minutes to complete. Data were collected by Thoroughbred Research Group in Louisville, KY.**

- This research was designed to measure technology adoption and the awareness of available broadband service, and establish benchmarks for these metrics.

**The questionnaire screened to include only adults age 18 or older with quotas set by gender, age, and county of residence (urban, suburban, or rural) to ensure adequate representation of all adults in the state.**

**Weights were applied to correct for minor variations and ensure that the sample matches the most recent U.S. Census estimates of the state's population by age, gender, and urban/rural classification of the respondent's county of residence. Weighting and research consultation were provided by Lucidity Research, LLC.**

## **Sampling margin of error:**

- Statewide, full sample (n=1,200):  $\pm 2.9\%$  at the 95% level of confidence. This sample error accounts for sample weighting, using the effective sample size.



# State Survey Sample (n=1,200 Adults)

<b>Gender:</b>			
Male	49%	<b>Any children under age 18 in household</b>	42%
Female	51%	<b>Average household size (# of persons)</b>	3.0
<b>Age:</b>		<b>Employment Status:</b>	
34 or younger	32%	Employed full-time or part-time	65%
35 to 44	17%	Retired	16%
45 to 54	19%	Homemaker not employed outside home	6%
55 to 64	15%	Student not working for wages	3%
65 or older	17%	Unemployed	5%
Mean age (years)	47	Disabled, not employed outside the home	5%
Median age (years)	46	<b>Educational Attainment:</b>	
<b>Race/Ethnicity:</b>		Less than high school	6%
White (non-Hispanic)	86%	High school graduate	21%
Black (non-Hispanic)	4%	Some college	29%
Any other (non-Hispanic)	3%	College graduate or higher	42%
Hispanic origin or descent	4%	<b>Household Income:</b>	
Refused	3%	Under \$25,000	16%
<b>Marital Status:</b>		\$25,000 to \$49,999	24%
Single, Never Married	13%	\$50,000 to \$74,999	19%
Married or Living in Partnered Relationship	67%	\$75,000 or higher	28%
Separated or Divorced	10%	No answer/refused	13%
Widowed	8%	Mean household income (\$000)	\$58
Refused to say	2%	Median household income (\$000)	\$54

Note: Sample profile shown here is after weighting to U.S. Census by age, gender, and urban/suburban/rural county classification



*SBDD Supplemental Grant Application  
Approved by NTIA on September 27, 2010*

**Funding: \$4,397,431 over 4 years (through Dec. 2014)**

- 1. Broadband Mapping through the end of 2014**
- 2. State Broadband Capacity Building**
  - a. State Broadband Program Office**
  - b. Kansas Broadband Task Force**
  - c. State Broadband Summit**
- 3. Technical Assistance**
  - a. State-level research on residential and business use**
  - b. Cost-modeling services for communities**
  - c. Enterprise Architecture Program/Analysis**
- 4. Regional Technology Planning Teams**
  - a. Implement Planning Teams in 7 Regions for 2 years**



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